U.S. EPA REGION III
Office of Analytical Services and Quality Assurance
Fort Meade, Maryland

OASQA LABORATORY REPORT

ELKTON FARMS

Lab Request #: REQ03008
Request Form #: DAS R31295

Report prepared on: December 23, 2002

Approval for release:

Susan Warner

OASQA Representative

Site contact(s): Lorie Baker (3HS13)
Alex Cox

U.S. EPA REGION III OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

SITE NAME: ELKTON FARMS

LAB REQUEST # REQ03008

SAMPLE DESCRIPTIONS

Sample #	Station	Description	Matrix	Type	End Collection Date	Time
02100901	S12	R31295-S12	Soil	GRAB	10/08/2002	11:45
02100902	S13	R31295-S13	Soil	GRAB	10/08/2002	13:05
02100903	S14	R31295-S14	Soil	GRAB	10/08/2002	11:25
02100904	S3	R31295-S3	Soil	GRAB	10/08/2002	09:45
02100905	S5	R31295-S5	Soil	GRAB	10/08/2002	11:40
02100906	S8	R31295-S8	Soil	GRAB	10/08/2002	12:35
02100907	SED2	R31295-SED2	Bottom Sediment or Deposition	GRAB	10/08/2002	13:25
02100908	SED3	R31295-SED3	Bottom Sediment or Deposition	GRAB	10/08/2002	11:20
02100909	SED4	R31295-SED4	Bottom Sediment or Deposition	GRAB	10/08/2002	10:45
02100910	SED5	R31295-SED5	Bottom Sediment or Deposition	GRAB	10/08/2002	10:00
02100911	SED6	R31295-SED6	Bottom Sediment or Deposition	GRAB	10/08/2002	13:30
02100912	SS12	R31295-SS12	Soil	GRAB	10/08/2002	12:45
02100913	SS3	R31295-SS3	Soil	GRAB	10/08/2002	10:15
02100914	SS5	R31295-SS5	Soil	GRAB	10/08/2002	12:40
02100915	SS8	R31295-SS8	Soil	GRAB	10/08/2002	12:40
02100916	SW2	R31295-SW2	Surface Water	GRAB	10/08/2002	13:25
02100917	SW3	R31295-SW3	Surface Water	GRAB	10/08/2002	11:15
02100918	SW4	R31295-SW4	Surface Water	GRAB	10/08/2002	10:40
02100919	SW5	R31295-SW5	Surface Water	GRAB	10/08/2002	09:50
02100920	SW6	R31295-SW6	Surface Water	GRAB	10/08/2002	13:30
02101001	S1	R31295-S1	Soil	GRAB	10/09/2002	09:40
02101002	S10	R31295-S10	Soil	GRAB	10/09/2002	11:50
02101003	S11	R31295-S11	Soil	GRAB	10/09/2002	12:10
02101004	S2	R31295-S2	Soil	GRAB	10/09/2002	12:50
02101005	S4	R31295-S4	Soil	GRAB	10/09/2002	11:25
02101006	S6	R31295-S6	Soil	GRAB	10/09/2002	13:00
02101007	S7	R31295-S7	Soil	GRAB	10/09/2002	11:00
02101008	S9	R31295-S9	Soil	GRAB	10/09/2002	10:30
02101009	SED1	R31295-SED1	Bottom Sediment or Deposition	GRAB	10/09/2002	09:30
02101010	SS1	R31295-SS1	Soil	GRAB	10/09/2002	10:00
02101011	SS11	R31295-SS11	Soil	GRAB	10/09/2002	12:15
02101012	SS2	R31295-SS2	Soil	GRAB	10/09/2002	12:55
02101013	SS4	R31295-SS4	Soil	GRAB	10/09/2002	14:40

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SAMPLE DESCRIPTIONS

Sample #	Station	Description		Type	Date	Time
02101014	SS6	R31295-SS6	Soil	GRAB	10/09/2002	13:00
02101015	SS9	R31295-SS9	Soil	GRAB	10/09/2002	10:40
02101016	SW1	R31295-SW1	Surface Water	GRAB	10/09/2002	09:25

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TESTS REQUESTED

INORGANICS 021009

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
Perchlorate by IC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

INORGANICS 021010

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Perchlorate by IC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

ORGANICS 021009

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
Nitroaromatics and Nitramines by HPLC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

ORGANICS 021010

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Nitroaromatics and Nitramines by HPLC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

(X = Test Requested)

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QUALIFIER CODE AND GLOSSARY DEFINITIONS

QUALIFIER CODES:

<	Sample value is below the quantitation limit. Quantitation limit reported.
</=	Reported value is estimated. Sample was analyzed in duplicate, one value is equal to or above the quantitation limit and one below. Average of quantitation limit and detected value reported.
>	Sample value is above the quantitation range.
A	Quality control value is outside acceptance limits.
B	Not detected substantially above (10 times) the level reported in the laboratory or field blanks (includes field, trip, rinsate, and equipment blanks).
C	See report narrative for analyst's observations concerning this result.
D	Sample and duplicate values are below the quantitation limit. Quantitation limit reported.
E	Value exceeds a theoretically greater value (e.g. dissolved > total, orthophosphate > total phosphorus). However, the difference is within the expected precision of the analytical techniques and is not statistically significant.
I	An interference exists which masks true response. See report narrative for explanation.
J	Analyte present. Reported value is estimated; concentration is outside the range for accurate quantitation.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N	Presumptive evidence indicates the presence of the compound. Special methods and/or method modifications may be needed to confirm its presence or absence in future sampling efforts.
NA	Analysis was not requested.
Q	No analytical results. See report for explanation.
R	Unreliable results. Analyte may or may not be present in the sample. Supporting data is necessary to confirm results.
T	Tentatively Identified Compound. Identified as a result of a library search using the EPA/NIH Mass Spectral Library. Authentic standards were not available to properly identify and quantitate the compound. The reported concentration is an estimate.
TD	Spike recovery too dilute for accurate quantitation.
UJ	Not detected. Quantitation limit is estimated.
UL	Not detected. Quantitation limit is probably higher.

GLOSSARY:

()	Numbers in parentheses are analytical spike recoveries (e.g. post-digestion spikes).
[]	Numbers in brackets are matrix spike recoveries (e.g. pre-digestion spikes).
MS/MSD	Matrix spike/matrix spike duplicate; a known increment of target analyte made to a sample before preparation or analyses.
MSA	Method of Standard Additions.
RPD	Relative Percent Difference; the results for duplicate analyses are presented as the mean and the relative percent difference.

$$RPD = \frac{|Replicate1 - Replicate2|}{(Replicate1 + Replicate2)/2} \times 100$$

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INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	02100901	02100902	02100903	02100904	02100905
	STATION ID:	S12	S13	S14	S3	S5
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Perchlorate by IC						
Perchlorate		<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg

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INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	02100906	02100907	02100908	02100909	02100910
	STATION ID:	S8	SED2	SED3	SED4	SED5
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Perchlorate by IC						
Perchlorate		<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg

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INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	02100911	02100912	02100913	02100914	02100915
	STATION ID:	SED6	SS12	SS3	SS5	SS8
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Perchlorate by IC						
Perchlorate		<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg

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INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	02100916	02100917	02100918	02100919	02100920
	STATION ID:	SW2	SW3	SW4	SW5	SW6
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Perchlorate by IC						
Perchlorate		<4.00 ug/L	<4.00 ug/L	<4.00 ug/L	<4.00 ug/L	<4.00 ug/L

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INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	02101001	02101002	02101003	02101004	02101005
	STATION ID:	S1	S10	S11	S2	S4
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Perchlorate by IC						
Perchlorate		<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg

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INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	02101006	02101007	02101008	02101009	02101010
	STATION ID:	S6	S7	S9	SED1	SS1
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Perchlorate by IC						
Perchlorate		<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg

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INORGANIC ANALYTICAL SAMPLE RESULTS

	SAMPLE NUMBER:	02101011	02101012	02101013	02101014	02101015
	STATION ID:	SS11	SS2	SS4	SS6	SS9
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Perchlorate by IC						
Perchlorate		<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg	<0.020 mg/Kg

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INORGANIC ANALYTICAL SAMPLE RESULTS

SAMPLE NUMBER:	02101016
STATION ID:	SW1
	SAMPLE

Perchlorate by IC

Perchlorate	<4.00 ug/L

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INORGANIC QUALITY CONTROL RESULTS

	SAMPLE NUMBER:	02100910		02101005		02101015	
	STATION ID:	SED5		S4		SS9	
	Units:	% REC	RPD	% REC	RPD	% REC	RPD
Perchlorate by IC							
Perchlorate		[83]	D	[92]	D	[84]	D

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INORGANIC QUALITY CONTROL RESULTS

SAMPLE NUMBER: 02101016

STATION ID: SW1

	Units:	% REC	RPD
Perchlorate by IC			
Perchlorate		[89]	D

[] = LSF
() = ISF

Perchlorate Determination

Analyst:

Ronald H. Altman
Chemist

Method:

The ELKTON FARMS water samples (REQ03008) were analyzed for Perchlorate using EPA Method 314.0[1] (Determination of Perchlorate in Drinking Water using Ion Chromatography). The water samples were filtered through a Gelman glass fiber Type A/E 47 mm. In addition, a laboratory reagent (LRB), laboratory fortified blank (LFB), laboratory fortified blank at the maximum conductivity threshold (LFB at MCT), a matrix duplicate (LD2) and a matrix spike (LSF) were also prepared through the process. The soil samples were prepared for inorganic analysis by weighing approximately four grams of the wet soil sample. 20 mL of Milli-Q was added to the samples and the slurry was vortexed for one minute. The prepared samples were centrifuged for 10 minutes at 2000 rpm. The liquid phase was filtered through a 0.45µm syringe filter prior to inorganic analyses using EPA Method 314.0 (Determination of Perchlorate in Drinking Water Using Ion Chromatography) on the Dionex DX-600. A laboratory reagent (LRB), laboratory fortified blank (LFB), laboratory fortified blank at the maximum conductivity threshold (LFB at MCT) were prepared and taken through the process. In addition a matrix duplicate (LD2) and a matrix spike (LSF) were also prepared for each set of 10 samples and taken through the process.

[1] US EPA Method 314.0, Determination of Perchlorate in Drinking Water Using Ion Chromatography, Revision 1.0, November 1999

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ORGANIC ANALYTICAL SAMPLE RESULTS

	Sample Number:	02100902	02100903	02100904	02100906	02101006
	Station ID:	S13	S14	S3	S8	S6
		SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Nitroaromatics and Nitramines by HPLC						
4-Amino-2,6-dinitrotoluene		0.08 J mg/Kg	0.580 mg/Kg		0.05 J mg/Kg	1.53 mg/Kg
2-Amino-4,6-dinitrotoluene			0.470 mg/Kg	0.01 J mg/Kg	0.01 J mg/Kg	1.26 mg/Kg
Dinitrotoluene isomers (2,4- and 2,6-)			0.090 mg/Kg			0.110 mg/Kg
1,3,5-Trinitrobenzene						0.090 mg/Kg
2,4,6-Trinitrotoluene		0.04 J mg/Kg	1.39 mg/Kg	0.04 J mg/Kg		0.963 mg/Kg

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ORGANIC ANALYTICAL SAMPLE RESULTS

Sample Number:	02101014
Station ID:	SS6
	SAMPLE

Nitroaromatics and Nitramines by HPLC

4-Amino-2,6-dinitrotoluene	0.123 mg/Kg
2-Amino-4,6-dinitrotoluene	0.098 mg/Kg
Dinitrotoluene isomers (2,4- and 2,6-)	
1,3,5-Trinitrobenzene	
2,4,6-Trinitrotoluene	0.124 mg/Kg

Nitroaromatic and Nitramine Analysis by HPLC

Analyst:

Jennifer Gundersen
Chemist

Method:

Thirty solid samples and six aqueous samples from ELKTON FARMS (REQ03008) were received for analysis of nitroaromatic/nitramine explosives (Method 8330 analytes). The samples were collected October 8-9, 2002. Samples were extracted on October 11-23, 2002 and analyzed October 24 through November 4, 2002. Verbal results were provided on November 26, 2002. All samples were extracted and analyzed according to R3-QA221.0, a combined method based on SW-846 Methods 8000B and 8330.

Quality Control:

All samples were extracted and analyzed within holding time.

Initial calibration and second source verification were within acceptance limits.

All continuing calibrations were within acceptance limits with the exception of the following:

In CLC-5 HMX recovery was slightly above QC limits. Results for HMX may be biased high in the following samples 021010-10 through 021010-15 and 021010-15MS, 021010-15MSD. HMX was not detected in any of these samples. All other QC criteria for HMX were within limits.

All surrogate recoveries were within limits.

All matrix spike recoveries and relative percent differences were within the acceptance limits with the exception of the following:

Sample 021009-18MS recoveries of tetryl and TNT were below QC limits.
Sample 021009-18MSD recoveries of 1,3,5-trinitrobenzene, tetryl and TNT were below QC limits.
The relative percent difference for 1,3,5-trinitrobenzene and TNT recoveries exceeded QC limits for samples 021009-18MS and 021009-18MSD. Affected results were qualified "A".

Recoveries of lab fortified blanks and audits were within limits with the exception of low recoveries of tetryl, TNT and 1,3,5-TNB in the aqueous phase LCM. Tetryl recovery was low in the aqueous phase LFB and in one soil LCM.

Lab method and reagent blanks showed no contamination.

Sample results qualified with a "J" indicate that the analyte is present but the value is estimated because it is outside the calibration range.

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case: 31029
Client No: R31295
SDG No:
L

Date Shipped: 10/8/2002	**Chain of Custody Record**	**Sampler Signature:**	**For Lab Use Only**
Carrier Name: Hand Delivery	**Relinquished By** (Date / Time)	**Received By** (Date / Time)	**Lab Contract No:**
Airbill:	1 10/8/02 1540	10/8/02 1540	**Unit Price:**
Shipped to: OASQA, USEPA Region III, 701 Mapes Road, Fort Meade MD 20755, (410) 305-2667	2 10/8/02 1747	10.9.02 0917	**Transfer To:**
	3		**Lab Contract No:**
	4		**Unit Price:**

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
R31295-S12	Surface Soil (0"-12") S. Morgan	L/G	NIT_ARO (21), PER (21)	1016 (Ice Only), 1017 (Ice Only) (2)	R31295-S12	S: 10/8/2002	11:45	02100901
R31295-S13	Surface Soil (0"-12")/ Alex Cox	L/G	NIT_ARO (21), PER (21)	1018 (Ice Only), 1019 (Ice Only) (2)	R31295-S13	S: 10/8/2002	13:05	02
R31295-S14	Surface Soil (0"-12") A. Cox	L/G	NIT_ARO (21), PER (21)	1020 (Ice Only), 1021 (Ice Only) (2)	R31295-S14	S: 10/8/2002	11:25	03
R31295-S3	Surface Soil (0"-12")/ Scott Morgan	L/G	NIT_ARO (21), PER (21)	1024 (Ice Only), 1025 (Ice Only) (2)	R31295-S3	S: 10/8/2002	9:45	04
R31295-S5	Surface Soil (0"-12") S. Morgan	L/G	NIT_ARO (21), PER (21)	1028 (Ice Only), 1029 (Ice Only) (2)	R31295-S5	S: 10/8/2002	11:40	05
R31295-S8	Surface Soil (0"-12")/ Alex Cox	L/G	NIT_ARO (21), PER (21)	1034 (Ice Only), 1035 (Ice Only) (2)	R31295-S8	S: 10/8/2002	12:35	06
R31295-SED2	Sediment/ Dixon Wood	L/G	NIT_ARO (21), PER (21)	1040 (Ice Only), 1041 (Ice Only) (2)	R31295-SED2	S: 10/8/2002	13:25	07
R31295-SED3	Sediment/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1042 (Ice Only), 1043 (Ice Only) (2)	R31295-SED3	S: 10/8/2002	11:20	08
R31295-SED4	Sediment/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1044 (Ice Only), 1045 (Ice Only) (2)	R31295-SED4	S: 10/8/2002	10:45	09
R31295-SED5	Sediment/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1046 (Ice Only), 1047 (Ice Only) (2)	R31295-SED5	S: 10/8/2002	10:00	10

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):** Phillip Anderson	**Cooler Temperature Upon Receipt:**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G		**Custody Seal Intact?** ___ **Shipment Iced?** ___

NIT_ARO = Nitroaromatics, PER = Perchlorates

TR Number: 3-592370820-100802-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Generic Chain of Custody

EPA

Reference Case 31029
Client No: R31295
SDG No:
L

Date Shipped: 10/8/2002
Carrier Name: Hand Delivery
Airbill:
Shipped to: OASQA
USEPA Region III
701 Mapes Road
Fort Meade MD 20755
(410) 305-2667

Chain of Custody Record

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1		10/8/02 1540		10/8/02 1540
2		10/9/02 0717	Thomas Rynt	10.9.02 0717
3				
4				

Sampler Signature:

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
R31295-SED6	Sediment/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1048 (Ice Only), 1049 (Ice Only) (2)	R31295-SED6	S: 10/8/2002	13:30	02100911
R31295-SS12	Subsurface Soil (>12") S. Morgan	L/G	NIT_ARO (21), PER (21)	1056 (Ice Only), 1057 (Ice Only) (2)	R31295-SS12	S: 10/8/2002	12:45	12
R31295-SS3	Subsurface Soil (>12")/ Scott Morgan	L/G	NIT_ARO (21), PER (21)	1064 (Ice Only), 1065 (Ice Only) (2)	R31295-SS3	S: 10/8/2002	10:15	13
R31295-SS5	Subsurface Soil (>12") S. Morgan	L/G	NIT_ARO (21), PER (21)	1068 (Ice Only), 1069 (Ice Only) (2)	R31295-SS5	S: 10/8/2002	12:40	14
R31295-SS8	Subsurface Soil (>12")/ Alex Cox	L/G	NIT_ARO (21), PER (21)	1074 (Ice Only), 1075 (Ice Only) (2)	R31295-SS8	S: 10/8/2002	12:40	15
R31295-SW2	Surface Water/ Dixon Wood	L/G	NIT_ARO (21), PER (21)	1080 (Ice Only), 1081 (Ice Only) (2)	R31295-SW2	S: 10/8/2002	13:25	16
R31295-SW3	Surface Water/ Dixon Wood	L/G	NIT_ARO (21), PER (21)	1082 (Ice Only), 1083 (Ice Only) (2)	R31295-SW3	S: 10/8/2002	11:15	17
R31295-SW4	Surface Water/ Dixon Wood	L/G	NIT_ARO (21), PER (21)	1085 (Ice Only), 1363 (Ice Only), 1364 (Ice Only), 1365 (Ice Only) (4)	R31295-SW4	S: 10/8/2002	10:40	18
R31295-SW5	Surface Water/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1086 (Ice Only), 1087 (Ice Only) (2)	R31295-SW5	S: 10/8/2002	9:50	19
R31295-SW6	Surface Water/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1088 (Ice Only), 1089 (Ice Only) (2)	R31295-SW6	S: 10/8/2002	13:30	20

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G		**Custody Seal Intact?** ___ **Shipment Iced?** ___

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Generic Chain of Custody

Reference Case 31029
Client No: R31295
SDG No:
L

Date Shipped: 10/9/2002
Carrier Name: Hand Delivery
Airbill:
Shipped to: OASQA
USEPA Region III
701 Mapes Road
Fort Meade MD 20755
(410) 305-2667

Chain of Custody Record

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1		10/9/02 1600		10/9/02 1600
2		10/10/02 0720		10.10.02 0720
3				
4				

Sampler Signature:

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
R31295-S1	Surface Soil (0"-12")/ Magalie Gelin	L/G	NIT_ARO (21), PER (21)	1010 (Ice Only), 1011 (Ice Only) (2)	R31295-S1	S: 10/9/2002	9:40	02101001
R31295-S10	Surface Soil (0"-12")/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1012 (Ice Only), 1013 (Ice Only) (2)	R31295-S10	S: 10/9/2002	11:50	02
R31295-S11	Surface Soil (0"-12") A.Cox	L/G	NIT_ARO (21), PER (21)	1014 (Ice Only), 1015 (Ice Only) (2)	R31295-S11	S: 10/9/2002	12:10	03
R31295-S2	Surface Soil (0"-12")/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1022 (Ice Only), 1023 (Ice Only) (2)	R31295-S2	S: 10/9/2002	12:50	04
R31295-S4	Surface Soil (0"-12")/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1026 (Ice Only), 1027 (Ice Only) (2)	R31295-S4	S: 10/9/2002	11:25	05
R31295-S6	Surface Soil (0"-12")/ Magalie Gelin	L/G	NIT_ARO (21), PER (21)	1030 (Ice Only), 1031 (Ice Only) (2)	R31295-S6	S: 10/9/2002	13:00	06
R31295-S7	Surface Soil (0"-12")/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1032 (Ice Only), 1033 (Ice Only) (2)	R31295-S7	S: 10/9/2002	11:00	07
R31295-S9	Surface Soil (0"-12")/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1036 (Ice Only), 1037 (Ice Only) (2)	R31295-S9	S: 10/9/2002	10:30	08
R31295-SED1	Sediment/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1038 (Ice Only), 1039 (Ice Only) (2)	R31295-SED1	S: 10/9/2002	9:30	09

Shipment for Case Complete?N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s): Magalie Gelin, Phillip Anderson	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:	
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G		**Custody Seal Intact?** ___	**Shipment Iced?** ___

NIT_ARO = Nitroaromatics, PER = Perchlorates

TR Number: 3-592370820-100902-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case 31029
Client No: R31295
SDG No:

L

Date Shipped: 10/9/2002	**Chain of Custody Record**	**Sampler Signature:**	**For Lab Use Only**
Carrier Name: Hand Delivery	**Relinquished By** (Date / Time)	**Received By** (Date / Time)	**Lab Contract No:**
Airbill:	1 10/9/02 1600	10/9/02 1600	**Unit Price:**
Shipped to: OASQA USEPA Region III 701 Mapes Road Fort Meade MD 20755 (410) 305-2667	2 10/10/02 720	10.10.02 720	**Transfer To:**
	3		**Lab Contract No:**
	4		**Unit Price:**

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
R31295-SS1	Subsurface Soil (>12")/ Magalie Gelin	L/G	NIT_ARO (21), PER (21)	1050 (Ice Only), 1051 (Ice Only) (2)	R31295-SS1	S: 10/9/2002	10:00	02101010
R31295-SS11	Subsurface Soil (>12") A.COR	L/G	NIT_ARO (21), PER (21)	1054 (Ice Only), 1055 (Ice Only) (2)	R31295-SS11	S: 10/9/2002	12:15	11
R31295-SS2	Subsurface Soil (>12")/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1062 (Ice Only), 1063 (Ice Only) (2)	R31295-SS2	S: 10/9/2002	12:55	12
R31295-SS4	Subsurface Soil (>12")/ Magalie Gelin	L/G	NIT_ARO (21), PER (21)	1066 (Ice Only), 1067 (Ice Only) (2)	R31295-SS4	S: 10/9/2002	14:40	13
R31295-SS6	Subsurface Soil (>12")/ Magalie Gelin	L/G	NIT_ARO (21), PER (21)	1070 (Ice Only), 1071 (Ice Only) (2)	R31295-SS6	S: 10/9/2002	13:00	14
R31295-SS9	Subsurface Soil (>12")/ Phillip Anderson	L/G	NIT_ARO (21), PER (21)	1076 (Ice Only), 1077 (Ice Only) (2)	R31295-SS9	S: 10/9/2002	10:40	15
R31295-SW1	Surface Water/ Dixon Wood DW	L/G	NIT_ARO (21), PER (21)	1078 (Ice Only), 1079 (Ice Only) (2)	R31295-SW1	S: 10/9/2002	9:25	16

Shipment for Case Complete? N	**Sample(s) to be used for laboratory QC:**	**Additional Sampler Signature(s):** Magalie Gelin, Phillip Anderson, D. Wood	**Cooler Temperature Upon Receipt:**	**Chain of Custody Seal Number:**
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G		**Custody Seal Intact?** ___ **Shipment Iced?** ___

NIT_ARO = Nitroaromatics, PER = Perchlorates

TR Number: 3-592370820-100902-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

R00 3008

U.S. EPA REGION III OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

SITE NAME: ELKTON FARMS

LAB REQUEST #: REQ03008

ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Matrix: SOLIDS

	SAMPLE NUMBER:	02100901	02100902	02100903	02100904	02100905	02100906	02100907	02100908
	STATION ID:	S12	S13	S14	S3	S5	S8	SED2	SED3
SURROGATES	LIMITS	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Nitroaromatics and Nitramines by HPLC	Range	% REC	% REC	% REC	% REC	% REC	% REC	% REC	% REC
1,2-Dinitrobenzene	(70-130)	100	102	108	102	98	104	104	98

U.S. EPA REGION III OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

SITE NAME: ELKTON FARMS
LAB REQUEST #: REQ03008

ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Matrix: SOLIDS

	SAMPLE NUMBER:	02100909	02100910	02100911	02100912	02100913	02100914	02100915	02101001
	STATION ID:	SED4	SED5	SED6	SS12	SS3	SS5	SS8	S1
SURROGATES	LIMITS	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Nitroaromatics and Nitramines by HPLC	Range	% REC	% REC	% REC	% REC	% REC	% REC	% REC	% REC
1,2-Dinitrobenzene	(70-130)	98	88	104	104	104	106	110	100

SITE NAME: ELKTON FARMS
LAB REQUEST #: REQ03008

ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Matrix: SOLIDS

	SAMPLE NUMBER:	02101002	02101003	02101004	02101005	02101006	02101007	02101008	02101009
	STATION ID:	S10	S11	S2	S4	S6	S7	S9	SED1
SURROGATES	LIMITS	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Nitroaromatics and Nitramines by HPLC	Range	% REC	% REC	% REC	% REC	% REC	% REC	% REC	% REC
1,2-Dinitrobenzene	(70-130)	106	106	100	98	98	104	104	100

U.S. EPA REGION III OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

SITE NAME: **ELKTON FARMS**

LAB REQUEST #: **REQ03008**

ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Matrix: SOLIDS

	SAMPLE NUMBER:	02101010	02101011	02101012	02101013	02101014	02101015
	STATION ID:	SS1	SS11	SS2	SS4	SS6	SS9
SURROGATES	LIMITS	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Nitroaromatics and Nitramines by HPLC	Range	% REC	% REC	% REC	% REC	% REC	% REC
1,2-Dinitrobenzene	(70-130)	100	106	102	102	98	100

Matrix: WATER

	SAMPLE NUMBER:	02100916	02100917	02100918	02100919	02100920	02101016
	STATION ID:	SW2	SW3	SW4	SW5	SW6	SW1
SURROGATES	LIMITS	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE	SAMPLE
Nitroaromatics and Nitramines by HPLC	Range	% REC	% REC	% REC	% REC	% REC	% REC
1,2-Dinitrobenzene	(70-130)	92	85	75	92	94	93

U.S EPA REGION III OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

SITE NAME: ELKTON FARMS

LAB REQUEST # REQ03008

ORGANIC QUALITY CONTROL (MATRIX SPIKE RECOVERIES)

Matrix: SOLIDS

	SAMPLE NUMBER:	02100911					02101015				
	STATION ID:	SED6					SS9				
		Spike Recovery		Recovery RPD			Spike Recovery		Recovery RPD		
ANALYTES		MS	MSD	Limits	RPD	Limits	MS	MSD	Limits	RPD	Limits
Nitroaromatics and Nitramines by HPLC		% REC	% REC	Range	RPD	Limit	% REC	% REC	Range	RPD	Limit
4-Amino-2,6-Dinitrotoluene		96	94	(70-130)	2	25	106	100	(70-130)	6	25
2-Amino-4,6-Dinitrotoluene		110	100	(70-130)	10	25	112	108	(70-130)	4	25
1,3-Dinitrobenzene		110	104	(70-130)	6	25	106	102	(70-130)	4	25
Dinitrotoluene isomers (2,4- and 2,6-)		109	105	(70-130)	4	25	108	105	(70-130)	3	25
RDX		106	100	(70-130)	6	25	96	112	(70-130)	15	25
Tetryl		80	82	(60-130)	2	25	84	94	(60-130)	11	25
Nitrobenzene		112	104	(70-130)	7	25	106	108	(70-130)	2	25
2-Nitrotoluene		108	108	(70-130)	0	25	106	102	(70-130)	4	25
3-Nitrotoluene		114	106	(70-130)	7	25	110	104	(70-130)	6	25
4-Nitrotoluene		104	92	(70-130)	12	25	104	98	(70-130)	6	25
HMX		116	114	(60-130)	2	25	126	126	(60-130)	0	25
1,3,5-Trinitrobenzene		108	102	(70-130)	6	25	104	102	(70-130)	2	25
2,4,6-Trinitrotoluene		108	108	(70-130)	0	25	104	108	(70-130)	4	25

Matrix: WATER

	SAMPLE NUMBER:	02100918				
	STATION ID:	SW4				
		Spike Recovery		Recovery RPD		
ANALYTES		MS	MSD	Limits	RPD	Limits
Nitroaromatics and Nitramines by HPLC		% REC	% REC	Range	RPD	Limit
4-Amino-2,6-Dinitrotoluene		104	109	(70-130)	5	25
2-Amino-4,6-Dinitrotoluene		103	103	(70-130)	0	25
1,3-Dinitrobenzene		92	95	(70-130)	3	25
Dinitrotoluene isomers (2,4- and 2,6-)		98	98	(70-130)	0	25
RDX		100	101	(70-130)	1	25
Tetryl		0 A	0 A	(60-130)	0	25
Nitrobenzene		85	87	(70-130)	2	25

U.S EPA REGION III OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

SITE NAME: ELKTON FARMS

LAB REQUEST # REQ03008

ORGANIC QUALITY CONTROL (MATRIX SPIKE RECOVERIES)

Matrix: WATER

	SAMPLE NUMBER:	02100918				
	STATION ID:	SW4				
		Spike Recovery		Recovery RPD		
ANALYTES		MS	MSD	Limits	RPD	Limits
Nitroaromatics and Nitramines by HPLC		**% REC**	**% REC**	**Range**	**RPD**	**Limit**
2-Nitrotoluene		84	85	(70-130)	1	25
3-Nitrotoluene		91	92	(70-130)	1	25
4-Nitrotoluene		91	94	(70-130)	3	25
HMX		100	97	(60-130)	3	25
1,3,5-Trinitrobenzene		76	43 A	(70-130)	55 A	25
2,4,6-Trinitrotoluene		63 A	45 A	(70-130)	33 A	25

U.S. EPA REGION III OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

SITE NAME: ELKTON FARMS

LAB REQUEST #: REQ03008

SUPPLEMENTAL SAMPLE INFORMATION

Nitroaromatics and Nitramines by HPLC

SAMPLE #	SAMPLE NQL FACTOR
02100901	1
02100902	1
02100903	2
02100904	1
02100905	1
02100906	1
02100907	1
02100908	1
02100909	1
02100910	1
02100911	1
02100912	1
02100913	1
02100914	1
02100915	1
02100916	1
02100917	1
02100918	1
02100919	1
02100920	1
02101001	1
02101002	1
02101003	1
02101004	1
02101005	1
02101006	2
02101007	1
02101008	1
02101009	1
02101010	1
02101011	1
02101012	1
02101013	1
02101014	1
02101015	1
02101016	1

NQL Factor is an overall correction factor applied to the method's Nominal Quantitation Limit to correct for analytical adjustments made during the analysis.

USEPA Region III
Office of Analytical Services and Quality Assurance (OASQA)
Nitroaromatic and Nitramine Analysis
Nominal Quantitation Limits (NQL)

Units: Water = ug/L

Actual Quantitation Limit = (NQL Factor) X NQL

CAS #	Compound	NQL
35572-78-2	2-Amino-4,6-dinitrotoluene (2-Am-DNT)	0.13
99-65-0	1,3-Dinitrobenzene (1,3-DNB)	0.13
121-14-2	2,4-Dinitrotoluene (2,4-DNT)	0.13
2691-41-0	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.26
98-95-3	Nitrobenzene (NB)	0.13
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.26
99-35-4	1,3,5-Trinitrobenzene (1,3,5-TNB)	0.13
118-96-7	2,4,6-Trinitrotoluene (TNT)	0.13
1946-51-0	4-Amino-2,6-Dinitrotoluene (4-Am-DNT)	0.13
88-72-2	2-Nitrotoluene (2-NT)	0.13
99-08-1	3-Nitrotoluene (3-NT)	0.13
99-99-0	4-Nitrotoluene (4-NT)	0.13
479-45-8	Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	0.26
606-20-2	2,6-Dinitrotoluene (2,6-DNT)	0.13

The "Nominal Quantitation Limit" listed for each target compound is based on the Superfund CLP Protocol. The Actual Quantitation Limits are related to the NQLs by the NQL Factor. This NQL Factor reflects procedural steps, e.g., extract dilution, which influence quantitation limits.

Revised March 12, 2002

USEPA Region III
Office of Analytical Services and Quality Assurance (OASQA)
Nitroaromatic and Nitramine Analysis
Nominal Quantitation Limits (NQL)

Units: Soil = mg/Kg

Actual Quantitation Limit = (NQL Factor) X NQL

CAS #	Compound	NQL
35572-78-2	2-Amino-4,6-dinitrotoluene (2-Am-DNT)	0.05
99-65-0	1,3-Dinitrobenzene (1,3-DNB)	0.05
121-14-2	2,4-Dinitrotoluene (2,4-DNT)	0.05
2691-41-0	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.10
98-95-3	Nitrobenzene (NB)	0.05
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.10
99-35-4	1,3,5-Trinitrobenzene (1,3,5-TNB)	0.05
118-96-7	2,4,6-Trinitrotoluene (TNT)	0.05
1946-51-0	4-Amino-2,6-Dinitrotoluene (4-Am-DNT)	0.05
88-72-2	2-Nitrotoluene (2-NT)	0.05
99-08-1	3-Nitrotoluene (3-NT)	0.05
99-99-0	4-Nitrotoluene (4-NT)	0.05
479-45-8	Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	0.10
606-20-2	2,6-Dinitrotoluene (2,6-DNT)	0.05

The "Nominal Quantitation Limit" listed for each target compound is based on the Superfund CLP Protocol. The Actual Quantitation Limits are related to the NQLs by the NQL Factor. This NQL Factor reflects procedural steps, e.g., extract dilution, which influence quantitation limits.

Revised March 12, 2002